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TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER

LUU, THANH X

ART UNIT PAPER NUMBER

2878

DATE MAILED: 09/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/047,454

Applicant(s)

KLEY, VICTOR B.

Examiner

Thanh X Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-42 and 55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20, 41 and 42 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 19, 23-30, 33-35, 39 and 55 is/are rejected.
- 7) ☒ Claim(s) 7, 9-18, 21, 22, 31, 32, 36-38 and 40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to amendments and remarks filed July 7, 2003.

Claims 1-42 and 55 are currently pending.

#### ***Claim Objections***

1. Claims 20, 35-38 and 40 are objected to because of the following informalities:

In claim 20, "said scanning probe microscope assembly a tunneling current mode..." and "said comprising" is not grammatically correct.

In claim 35, "said insulating layer" and "said upper surface" lacks proper antecedent basis.

In claim 36, "a scanning probe microscope" is not recited in claims 29 or 30.

In claims 36 and 37, "said element" lacks proper antecedent basis.

In claim 40, "said emitted light" and "said rotationally polarizing means" lacks proper antecedent basis. Further, it is unclear how many polarizing means are being claimed.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Takase et al. (U.S. Patent 5,138,159).

Regarding claim 19, Takase et al. disclose (see Figures 1 and 1A) a scanning probe microscope assembly for examining an object (38), comprising: a probe (20) having a tip with a sharp end; means for inducing and detecting (30, 46, 48, 49) non-optical interaction of the tip and the object; a light source (12) optically coupled to the tip for providing light to the tip; the tip being shaped to emit the provided light at the sharp end so that the emitted light optically interacts with the object; and a photodetector (44) for detecting light resulting from the emitted light optically interacting with the object. In addition, Takase et al. disclose (see Figure 1A) the tip includes a core material (20) transparent to the provided light and an obdurate layer or light emissive coating (26) transparent to the provided light over the core material at least at the sharp end. That is, the since light passes though the transparent coating and is emitted from it, light is emissive from the coating.

4. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Elings et al. (U.S. Patent 5,418,363).

Regarding claim 1, Elings et al. disclose (see Figure 7) an assembly for examining an object (102), comprising: a probe having a tip with a sharp end (at 204); means for inducing and detecting non-optical interaction of the tip and the object (214, 210, 208), the non-optical interaction being other than a tunneling current between the tip and the object; a light source (200) optically coupled to the tip for providing light to

the tip; the tip being shaped to emit the provided light at the sharp end so that the emitted light optically interacts with the object; and a photodetector (206) for detecting light resulting from the emitted light optically interacting with the object.

5. Claims 1-3, 5 and 55 are rejected under 35 U.S.C. 102(e) as being anticipated by Okada et al. (U.S. Patent 5,289,004).

Regarding claims 1-3, 5, 55, Okada et al. disclose (see Figures 14 and 15) an assembly for examining an object (1), comprising: a probe having a tip with a sharp end; means for inducing and detecting non-optical interaction (138, 150) of the tip and the object, the non-optical interaction being other than a tunneling current (atomic force) between the tip and the object; a light source (136) optically coupled to the tip for providing light to the tip; the tip being shaped to emit the provided light at the sharp end so that the emitted light optically interacts with the object; and a photodetector (CCD within 146) for detecting light resulting from the emitted light optically interacting with the object. Okada et al. also disclose (see Figure 14) the probe includes a cantilever connected to the tip and the non-optical interaction includes atomic force interaction and for detecting deflection of the cantilever due to the atomic force interaction. Okada et al. further disclose (see Figure 14) in addition, means for inducing and detecting a tunneling current (150, 152, 154) between the tip and the object, and a holding means as claimed. In addition, Okada et al. disclose (see Figure 14) the tip has a base; and a lens (under 136) disposed over the tip and coupled between the light source and the tip for focusing the provided light in the base of the tip.

6. Claims 29, 30, 33-35, as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Theodore et al. (U.S. Patent 5,338,932).

Regarding claims 29, 30, 33-35, Theodore et al. disclose (see Figure 1) a scanning probe microscope assembly for examining an object (30), the scanning probe microscope assembly having a tunneling current mode and an atomic force mode (see column 2, lines 10-11), the microscope comprising: a probe having a base (13), a cantilever (12) connected to the base, and a tip (14) connected to the cantilever; tunneling current means (16, 29) for inducing and detecting a tunneling current between the tip and the object during the tunneling current mode; and atomic force means (26, 27, positioning means (not shown)) for inducing atomic force interaction between the tip and the object and for detecting deflection of the cantilever due to the atomic force interaction during the atomic force mode; and holding means (15, 17, 18) for holding the cantilever rigid with respect to the base during the tunneling current mode (see also column 3, lines 55-60). Theodore et al. further disclose (see Figure 1) providing a clamping structure (15, 17, 18) connected to the base and controlling the clamping structure to hold the cantilever rigid with respect to the base during the tunneling current mode. Theodore et al. also disclose (see Figure 1) the cantilever has an upper and lower surface and holding is accomplished by a member (11) over the upper surface of the cantilever; providing an insulating layer (air) between the cantilever and the member and applying a voltage to hold the cantilever rigid as claimed.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al.

Regarding claims 6 and 8, Okada et al. disclose the claimed invention as set forth above. Okada et al. do not specifically disclose the type of lens. However, Fresnel and refractive lenses are notoriously well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a Fresnel lens or a refractive lens in the apparatus of Okada et al. to obtain a desired light distribution.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. in view of Takase et al.

Regarding claim 4, Okada et al. disclose the claimed invention as set forth above. Okada et al. do not specifically disclose spectrophotometric measurements. Takase et al. teach (see column 1, lines 20-25) providing a spectroscope for spectrophotometric measurements in such microscopes to obtain further information about an object. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide spectrophotometric measurements in the

apparatus of Okada et al. in view of Takase et al. to obtain a more complete detection of the object.

10. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Theodore et al. in view of Takase et al.

Regarding claim 4, Theodore et al. disclose the claimed invention as set forth above. Theodore et al. do not specifically disclose spectrophotometric measurements. Takase et al. teach (see column 1, lines 20-25) providing a spectroscope for spectrophotometric measurements in such microscopes to obtain further information about an object. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide spectrophotometric measurements in the apparatus of Theodore et al. in view of Takase et al. to obtain a more complete detection of the object.

### ***Double Patenting***

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).



12. Claims 23-29 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17-20, 22 and 24 of U.S. Patent No. 6,265,711. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present claims are either a broader version of the patented claims or a rewording of the patented claims.

***Response to Amendment***

13. The declaration filed on July 7, 2003 under 37 CFR 1.131 is sufficient to overcome the Muramatsu et al. reference.

***Allowable Subject Matter***

14. Claims 20, 41 and 42 are allowed over the prior art of record.

15. Claim 40 would be allowable once the objections are overcome.

16. Claims 7, 9-18, 21, 22, 31, 32, 36-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

17. Applicant's arguments with respect to claims 1-6, 8 and 55 have been considered but are moot in view of the new ground(s) of rejection.

18. Applicant's other arguments have been fully considered but they are not persuasive.

Regarding claim 19, Applicant asserts that the transparent coating Takase et al. is not a light emissive coating. Examiner disagrees. Since light is emitted from the

transparent coating (the transparent coating gives off light), the coating is a light emissive coating.

Regarding claim 29, Applicant asserts that Theodore et al. do not hold the cantilever rigid during tunneling current mode. Examiner disagrees. As understood, it appears that Applicant's invention provides the same means as Theodore et al. to keep the cantilever rigid (see claim 33). Further if something is stiff, it is firmly fixed or set, and is thus rigid. Theodore et al. disclose (see column 3, lines 55-60) the cantilever has a first stiffness during tunneling current mode. Theodore et al. further disclose (see column 4, lines 20-25) the cantilever has a second stiffness less than the first stiffness during atomic force mode. Thus, as understood, the cantilever is stiff or rigid during tunneling current mode.

Therefore, as set forth above, this rejection is proper.

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl  
September 12, 2003



Thanh X. Luu  
Patent Examiner